1. INTRODUCTION

The purpose of this document is to detail the plan for risk management associated with the information system migration of the Standard Procurement System (SPS). The SPS Program Management Office (PMO) has developed this Risk Management Plan (RMP) in accordance with Section 3.3.2 of DoD Regulation 5000.2-R, dated 4 November 1996. The RMP is intended to be a "living" document supported by a Lotus Notes database that will be used to continuously identify, measure, and mitigate risks throughout the life cycle of the SPS program. Appendix A contains a printout of current SPS risks.

1.1. Risk Management

This section describes the basic concepts of risk management and how they generally apply to the SPS risk management program. Later sections will build on this information applying it to the actual SPS risk management process.

A risk is an event with three characteristics: it causes an unwanted impact, it has a chance of occurring, and it involves a choice or series of choices that will prevent or reduce its impact. For example, "SPS does not achieve an appropriate degree (C2 equivalent) of security." is a risk. Its impacts include increased program costs, deployment schedule delays, and loss of functionality; there is a possibility that this risk will occur; and the PMO has a choice of options available to prevent the event or lessen its impacts.

The goal of risk management is to minimize the cost and chance associated with a risk through the execution of informed decisions. Risk management entails a continuous effort requiring participation throughout the SPS's life cycle. The process for managing risks consists of two phases: Risk Assessment and Risk Mitigation.

Risk Assessment involves two activities: risk identification and risk analysis. Risk Mitigation involves three activities: risk planning, risk monitoring, and risk controlling. Ideally, these five activities are carried out sequentially and continuously, as shown in Exhibit 1-1, for each risk event.

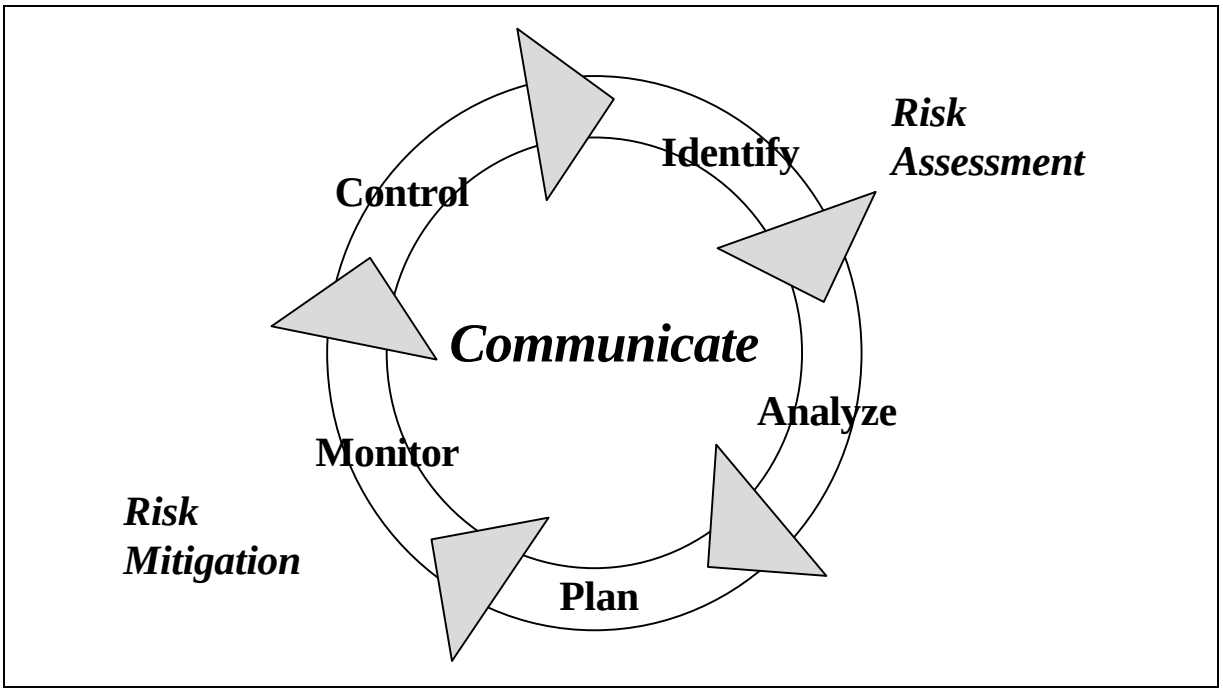

Exhibit 1-1: The Risk Management Process

This process can add significantly to surveying and understanding each SPS project risk. Communication is essential throughout this process. By communicating identified risks, the information about the risks, and the plan for mitigating risks, the entire program office can participate in managing them.

2. SPS RISK MANAGEMENT PROCESS

As previously mentioned, the purpose of risk management is to minimize the cost and chance associated with a risk through the execution of informed decisions. The risk management process is facilitated by a shared tool which allows the PMO to collaborate in each phase of risk management. Exhibit 2-1 displays this risk management process used by the SPS PMO to achieve that purpose.

2.1. Risk Management Application

The SPS program office has developed a Lotus Notes database called the Risk Management Application (RMA). The RMA supports and enhances the traditional risk management process by improving the communication of risk information as well as the organization and tracking of this information. It monitors functional, technical, and programmatic risks associated with the SPS.

The database is updated as new risks are identified and new mitigation strategies are developed. It is available on the PMO local area network (LAN) so that staff can review program risks and make suggestions or recommendations. A complete description of all the fields in the database and their standards are presented in Appendix B. Sections 2.2 to 2.7 walk through the process and explain how the RMA implements the process.

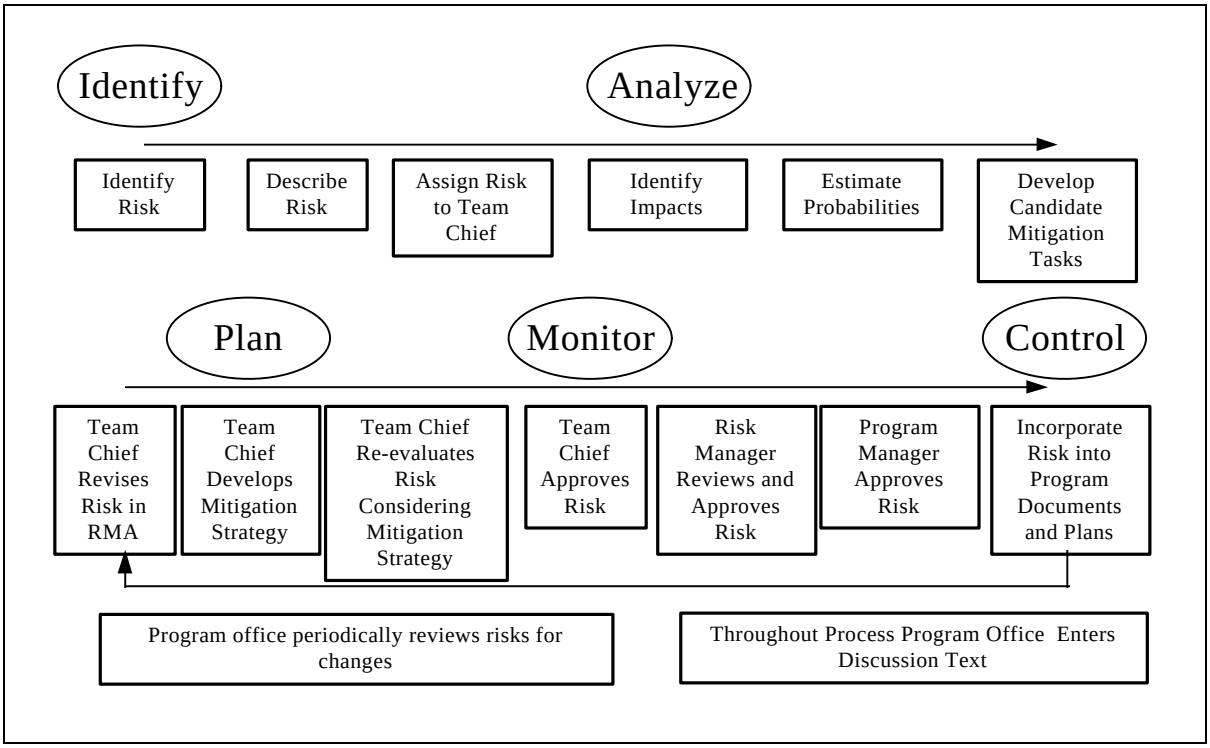

Exhibit 2-1: RMA Risk Management Process

2.2. Risk Identification

Early risk identification is necessary to allow for sufficient time to analyze, plan for, monitor, and control risks. If risks are documented early, the process of assessing risk impact and risk mitigation can be relatively simple. The program office is developing specific management and technical plans to manage the SPS. The team chiefs responsible for publication will review these documents in depth to identify risks that relate to SPS development and deployment. This interaction is displayed in Exhibit 2-2.

These efforts will result in an updated Program Management Plan (PMP) that will contain necessary appendices dealing with deployment, technical transition and this risk management plan.

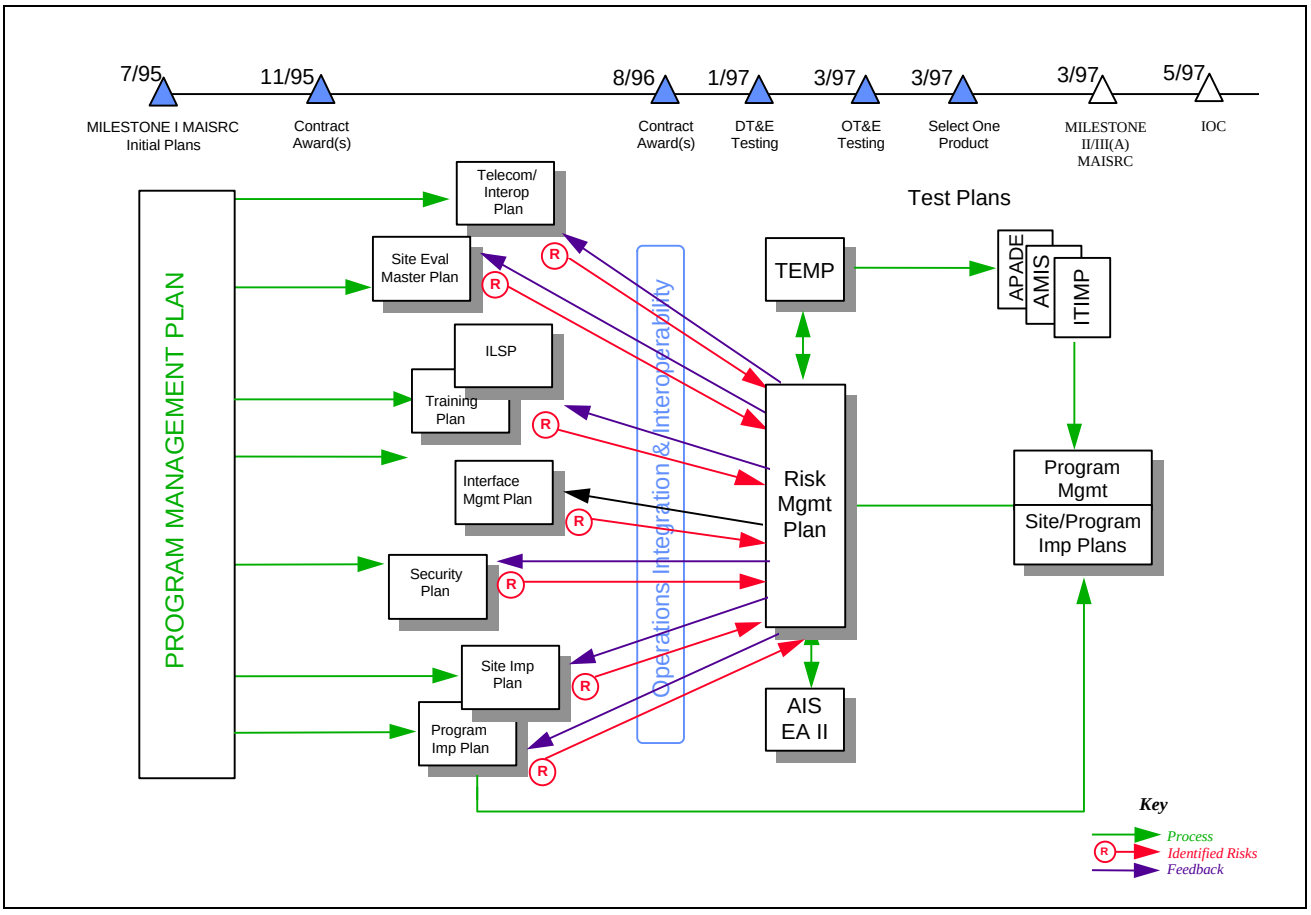

Exhibit 2-2: RMA Risk Management Process

Additional sources for risk identification include external documents and the PMO staff. External documents include DoD publications and industry standards (e.g., Software Engineering Institute (SEI) Risk Taxonomy). Finally, the PMO staff is the best source for identifying risks while conducting the business of the program office every day.

The Risk Manager (currently the Integration Team Chief), the PMO Team Chiefs, and Program Manager each play important roles in the risk management process. The

responsibilities of each are identified in the following sections as each phase of the process is defined. The Risk Manager is responsible for initially entering the identified risk into the database as part of the RMA strawman (the RMA strawman is data which is initially entered as a starting point which others can edit later). The Risk Manager also assigns the responsibility to analyze the risk to a team chief or a series of team chiefs based on the risk's nature.

2.3. Risk Analysis

Analyzing risks generates information to characterize each risk and support decision making and planning. Analyzing a risk involves describing the risk, estimating its impact, and estimating the probability of its occurrence.

2.3.1. Risk Description

A thorough description of an identified risk is entered in Sections 1.0 through 1.6 of the RMA. Exhibit 2-3 displays these sections.

<table>
<tr><td colspan="2">1.0 Description</td></tr>
<tr><td colspan="2">1.1 Risk Statement:
This section identifies a brief statement of the potential problem.</td></tr>
<tr><td>1.2 Risk Originator:
This section contains the person who first recognized the risk.</td><td>1.4 Risk Source:
This section contains the source of the risk.</td></tr>
<tr><td>1.3 Risk Entry Date:
This section contains the date the risk was first entered in the database.</td><td>1.5 Risk Description:
This section describes the risk more specifically than section 1.0, with additional information on the general characteristics of the risk and a brief impact of the risk to the SPS program.</td></tr>
<tr><td colspan="2">1.6 Risk Description Discussion:

Click to add to Risk Probability Discussion

This section provides an opportunity for staff within the PMO to comment on the risk.</td></tr>
</table>

Exhibit 2-3: Description Section of RMA

The Risk Manager is responsible for entering this information into the database and the team chiefs review and update as necessary. Section 1.6 allows the program office to add discussion relevant to the description made.

2.3.2. Risk Impact

The impact is estimated in Sections 2.1 through 2.3 of the RMA. Exhibit 2-4 displays these sections.

2.0 Measurement:	
2.1 Risk Impact: This section contains the highest potential impact if the risk occurs.	***2.2 Risk Impact Source:*** This section indicates who assigned the Risk Impact to the risk and sources for additional data.
2.3 Risk Impact Discussion: ***Click to add to Risk Impact Discussion*** This section provides an opportunity for staff within the PMO to comment on the risk's potential impact. Discussion on the impact of the risk should include descriptions of potential cost/schedule/performance impacts.	

Exhibit 2-4: Impact Section of RMA

Section 2.1 provides a one word description of the most likely impact possible for a given risk (i.e., Critical, Marginal or Negligible). The impact is measured in terms of deviation from the thresholds defined in the Acquisition Program Baseline (APB). These thresholds are clearly defined and are the accepted measures of program performance. A critical impact is a deviation from the program thresholds that will require additional reporting and MAISRC review. The remaining categories describe lesser degrees of impact as defined in Exhibit 2-5 below.

Category	Cost	Schedule	Performance
Critical	Greater than 10% of Cost	Greater than 90 Day Delay	Breach threshold value for greater than 90 Days
Marginal	2-10% of Cost	30-90 Day Delay	Breach threshold value for 30-90 Days
Negligible	Less than 2% of Cost	1-30 Day Delay	Breach threshold value for 1-30 Days

Exhibit 2-5: Stratified Risk Impacts

Section 2.2 indicates the person who assigned the risk impact. This is generally the responsible team chief.

Section 2.3 allows discussion relevant to the impact estimate. This section may include a comment generated by the Risk Manager justifying the risk impact above. The team chief

responsible for the risk reviews this comment and ensures that it reflects the mitigation strategy in place.

2.3.3. Risk Probability

Estimating the probability of each risk is accomplished in Sections 2.4 through 2.6 of the RMA. Exhibit 2-6 displays these sections.

2.4 Risk Probability: This section indicates the probability of the risk occurring based the relative values defined below.	***2.5 Risk Probability Source:*** This section indicates who assigned the risk probability.
2.6 Risk Probability Discussion: ***Click to add to Risk Probability Discussion*** This section provides an opportunity for staff within the PMO to comment on the risk's probability of occurrence.	

Exhibit 2-6: Probability Section of RMA

Section 2.4 provides a one word categorization of the probability of the risk event occurring. This categorization relates to the probability ranges defined in Exhibit 2-7 below.

Probability	Relative Values
High	There is a 60% - 100% chance the risk will occur.
Medium	There is a 30% - 60% chance.
Low	There is a 0% - 30% chance.

Exhibit 2-7: Stratified Risk Probabilities

Section 2.5 indicates the person who assigned the probability. This is generally the responsible team chief.

Section 2.6 of the RMA contains discussion relevant to the probability estimate. This section may include comments generated by the Risk Manager further describing the risk probability above. Accurately assigning probabilities to risks is a very difficult but necessary task. The team chiefs responsible for the risks, with the assistance of the Risk Manager and staff, are in the best position to estimate these probabilities.

2.4. Risk Mitigation

The team chiefs assigned to the risk develop a plan for mitigating the risk. Mitigation is the process of taking action to lessen the impact or probability of a risk event. Specific tasks for mitigating a risk are defined based on a mitigation strategy that considers the severity of the risk, program goals, and resource considerations. Possible strategies include:

- *Accept* - Take no action and accept the risk. (This is often an approach for low probability or low impact risks that are considered tolerable.)
- *Avert* - Take action to reduce the probability of a risk.
- *Reduce impact* - Take action to reduce the impact associated with a risk.
- *Transfer* - Accept the risk but reduce the impact by sharing the costs with others.

Risk Mitigation is documented in Sections 3.0 and 3.2 of the RMA. Exhibit 2-8 displays these sections.

3.0 Mitigation

3.1 Mitigation Strategy and Approved Mitigation Tasks:
This section contains the approved mitigation strategy and tasks for the PMO.

3.2 Mitigation Strategy Discussion and Candidate Mitigation Tasks:

Click to add Mitigation Strategy Discussion ***Click to add Candidate Mitigation Task***

This section provides an opportunity for staff within the PMO to comment on the risk's potential mitigation strategies and add candidate mitigation tasks.

Exhibit 2-8: Mitigation Section of RMA

Section 3.1 is the approved mitigation strategy for a risk and is composed by the responsible team chiefs. It generally includes a brief description of the mitigation strategy and a list of supporting mitigation tasks to be executed. Mitigation tasks follow the format shown in Exhibit 2-9.

Date: Date/Time task first entered.
Added by: Person who added task.
Task: Description of task to be executed.
Prompts for Task: Symptom or trigger that indicates the task should be executed.
Responsible for Mitigation: Person who will execute the task.

Exhibit 2-9: Mitigation Task Format

After Team Chiefs develop a mitigation strategy, they reevaluate the risk impact and probabilities considering the new mitigation strategy.

Section 3.2 is a discussion section where discussion relevant to mitigation strategy is made. It also includes candidate mitigation tasks that are composed by the PMO staff. Composing a mitigation strategy and tasks is the most difficult part of risk management. This section allows the staff of the program office, who come from a variety of experiences and backgrounds, to

contribute to the risk management process. The Team Chiefs use this input outright or modify it to formulate a mitigation strategy.

2.5. Risk Approval

Sections 4.1 and 4.2 of the RMA display risk approval. Exhibit 2-10 displays these sections.

4.0 Approval:
4.1 Team Chief Approval: Reflects whether the risk has received Team Chief approval.
4.2 Program Manager Approval: Reflects whether the risk has received program manager approval.

Exhibit 2-10: Approval Section of RMA

Section 4.1 introduces the Team Chief responsible for editing and approving the task, and a "yes" or "no" to indicate status of approval. Once team chiefs are satisfied that the risk meets their standards, they change the field from a "no" to a "yes."

Following team chief approval the Risk Manager reviews the risk. The Risk Manager considers the impact, probabilities, and mitigation strategy and makes a recommendation to the Program Manager (PM).

The PM gives final approval of the risk and assigns a risk rank. Once approved, all risks are ranked. This rank displays the relative priority that the PM places on the risk. Higher priority risks are monitored more closely.

2.6. Risk Monitoring

Risk management does not end when a risk is approved. Risks are periodically reviewed by the responsible Team Chiefs and PMO staff. In particular, mitigation task prompts are monitored by responsible staff members so the accompanying mitigation task can be executed when the prompt or trigger occurs. While risks with high impacts and probabilities require substantial attention, risks with low impacts and probabilities also need monitoring. If as the project progresses, these risks require additional attention, they will be managed as such.

2.7. Risk Controlling

The PMO will control risk primarily through the program's documents and plans. As mentioned in Section 2.2 internal documents are a significant source for risk identification, as well as a good place to further document mitigation tasks. It is incumbent upon SPS document authors to incorporate risk mitigation strategy and tasks into program plans. Their participation integrates risk management into program management. It also may highlight potential problems with specific strategies and tasks.

2.8. Responsibilities

As previously stated, the risk management process requires a coordinated effort. Each member of the PMO has a specific role to play. A summary of responsibilities is provided below.

2.8.1. Program Manager

The PM has the overall responsibility for risk management and is responsible for final approval of all risk analyses.

2.8.2. Risk Manager

The Risk Manager is responsible for the maintenance of the RMA and risk management documentation including this Risk Management Plan. The Risk Manager is responsible for developing a strawman for each risk. It is this risk strawman that the program office reviews and updates. Currently the Integration Team Chief is the Risk Manager.

2.8.3. Team Chiefs

The PMO team chiefs identify new risks and manage the risks assigned to their areas of responsibility. They are primarily responsible for editing the risk strawman described above. They also provide feedback on risks outside their areas of responsibility using the discussion fields of the RMA. When the information entered into the database meets their standards, the team chiefs approve their risks. They are also responsible for monitoring the status of their risks and ensuring that mitigation tasks are documented in program plans and performed.

2.8.4. PMO Staff

The PMO staff includes government employees and contractors. The PMO staff performs risk-related duties as assigned by their team chiefs. They also provide feedback on risks using the discussion fields of the RMA.

3. CONCLUSION

For risk management to be effective, it requires active participation at all levels. The RMA must be updated frequently so that it always reflects the current status of each risk. Mitigation strategies and tasks must be monitored and effectively executed. Effective risk management makes for a better program and ultimately ensures that the system is delivered meeting cost, schedule, and performance objectives.

Appendix A

Current SPS Program Risks